

Early Detection of Chronic Kidney Disease using Machine Learning

IBM Project

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Literature Survey

Survey 1:

Amirgaliyev (2015)

“Investigating support vector machines”

Amirgaliyev, et al. entitled “Analysis of Chronic Kidney Disease Dataset by Applying Machine Learning Methods” published in 2015. Currently, there are many people in the world suffering from chronic kidney diseases worldwide. Due to the several risk factors like food, environment and living standards many people get diseases suddenly without understanding of their condition. In this research study, the effects of using clinical features to classify patients with chronic kidney disease by using support vector machines algorithm is investigated. The chronic kidney disease data set is based on clinical history, physical examinations, and laboratory tests.

Survey 2:

Kunwar(2016)

“Using Data Mining Classification Techniques”

Kunwar, et al. entitled “Chronic Kidney Disease Analysis is Using Data Mining Classification Techniques” published in 2016. Data mining is the process of extracting hidden information from massive dataset, categorizing valid and unique patterns in data. There are many data mining techniques like clustering, classification, association analysis, regression etc. The objective of the paper is to predict Chronic Kidney Disease (CKD) using classification techniques like Naïve Bayes and Artificial Neural Network (ANN). The experimental results implemented in Rapid Miner tool show that

Naive Bayes produce more accurate results than Artificial Neural Network.

Survey 3 :

Aljaaf(2018)

“Using Machine Learning Supported by Predictive Analytics”

Aljaaf, et al. entitled “Early Prediction of Chronic Kidney Disease Using Machine Learning Supported by Predictive Analytics” published in 2018. Chronic Kidney Disease is a serious lifelong condition that induced by either kidney pathology or reduced kidney functions. Early prediction and proper treatments can possibly stop, or slow the progression of this chronic disease to end-stage, where dialysis or kidney transplantation is the only way to save patient’s life. In this study, we examine the ability of several machine-learning methods for early prediction of Chronic Kidney Disease.

Survey 4:

Avci E(2018)

“Using Naive Bayes (NB), K-Star, Support Vector Machines (SVM)”

Avci E et al. entitled “Performance Comparison of Some Classifiers on Chronic Kidney Disease Data” published in 2018. In this study, dataset named "Chronic Kidney Disease" obtained from UCI database is used. The dataset consists of 400 individual’s information and contains 25 features dataset was classified according to whether it is chronic kidney disease using Naive Bayes (NB), K-Star, Support Vector Machines (SVM) and J48 classifiers used in data mining.

Survey 5:

Devika(2019)

“Using Naive Bayes, KNN and Random Forest”

Devika, et al. entitled “Comparative Study of Classifier for Chronic Kidney Disease Prediction Using Naive Bayes, KNN and Random Forest” published in 2019. Chronic Kidney disease defines constrains which affects your kidneys and reduces your potential to stay healthy. Machine learning is an important task as it benefits many applications, varied knowledge mining classification approaches and machine learning algorithms are applied for prediction of chronic diseases. Therefore, this paper examines the performance of Naive Bayes, K-Nearest Neighbor (KNN) and Random Forest classifier on the basis of its accuracy, preciseness and execution time for CKD prediction. Finally, the outcome after conducted research is that the performance of Random Forest classifier is finest than Naive Bayes and KN.

References

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